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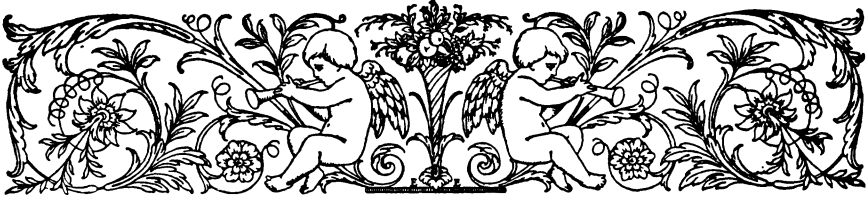
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# THE MUSICAL QUARTERLY

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## NATURAL LAW: ITS INFLUENCE ON MODERN MUSIC

By MARION BAUER

**I**S there a power inherent in Music itself, or is its influence the result of our own mental attitudes, of our cultural experience, and of our æsthetic development? In other words, is our modern musical expression a case of self-hypnotism or has it developed along legitimate lines of evolution?

One may demand a more precise explanation of the writer's use of the word "power." Is this "inherent power" occult, spiritual, emotional, or vibrational? The only answer possible at this point is, that no two people hear sound alike, any more than they react alike emotionally; consequently the occultist senses occult power in Music, the æsthetician sees the working out of his pet theories of the Beautiful, the True and the Good, according to the age in which he happens to live; the pedant scratches down on his blackboard all the digressions from the rules dictated by the masters, and recognizes no power save that of form and formula; the extremist denies the power of all existing rules and makes rules for himself; the reactionary sees only degeneration in modern works, and claims that "creative power" in music ceased just wherever he consciously or unconsciously failed to react to musical impressions; and the great army of the untrained respond to the emotional power of rhythm with much the same instinct that existed in primitive man.

It seems incredible, however, that for a period of five hundred years, we have been ruled arbitrarily by the common chord of C major, unless there be a fundamental principle behind it. As Harold Bauer, whose intellect is as keen as his piano playing is profound, once said:

This three voice chord is doubtlessly a part of the same idea, that is symbolized in the trinity in religion; the triangle in geometry; the soul, mind, and body of philosophy; the occult three-fold principle of unity,

variety, and multiplicity. But after all there is something finite and complete about the C major chord, like the old idea of a personal God—Jehovah; while the new harmony with its unresolved dissonances, its indefiniteness and its limitless progressions, expresses the growth of ideas, the development of mankind; dimly, vaguely, it reveals the IDEAL of Divinity, of world without end.

This same idea is expressed by the occult philosopher, Franz Hartmann, who says that every form in nature has a three-fold constitution, every symbol a three-fold meaning, every perfect act is a trinity. To constitute a complete act three factors are required: the motive, the will, and the performance. There is nothing in nature that has not its mathematical laws; the actions of the law of periodicity have long ago been observed in the vibrations producing light and sound, and through experiments in chemistry it has been recognized that all so-called simple elements are only various states of vibrations of one primordial element. Differences, therefore, in the finite world, are differences of function and of the ratio of vibration, not of substance or matter.

Granting for the sake of argument that this be a fact, demonstrable by experience rather than by logic, we then may assert that the musical scale reduces itself to a single tone which generates the overtones through different speeds or rates of vibration; the diatonic scale of to-day is an arbitrary man-made affair, with a scientific foundation, and is subject to countless variations; but the only scale, or chord as it is called by some, that exists in Nature is the harmonic series, and, although it can be explained scientifically, we cannot tell WHY it is, any more than we can account for gravitation or ether. To Pythagoras we owe not only the harmonic series, but through occult as well as scientific studies, he learned the relation of color and sound, and he constructed a scale with mathematical precision to conform not only to the solar spectrum, but to correspond with the planets and also with the seven planes of "Earth's geometrically constructed sphere." We must not lose sight of the fact that Rhythm is Nature's means of carrying Principle to its infinite manifestations, reacting on us as forms, sounds, motions.

To parallel the generic tone embodying overtones even beyond the point of being perceived by human ears, there is the compound solar ray consisting of visible colors, the heat ray known as the infra-red, and the actinic ray called the ultra-violet. What have heretofore been designated as the Newton primary colors,—red, yellow, and blue, correspond in the Pythagorean scale to the C major triad (*c-e-g*), and if we wish to push the analogy over the

border of logical deduction into the field of imaginative speculation, we may infer that all the tones of the scale may be drawn from the C major chord, much as the secondary colors of the prism are produced by the mixture of the primaries.

This relation of sound and color has eluded its pursuers throughout the centuries, and is to-day a source of interesting experiments, as is shown by the late Scriabin's work, "Prometheus." That definite conclusions as to its practicability can be reached is still a question. Symbolically and æsthetically the relationship exists, and we may some day be convinced that it has actual value in teaching absolute pitch and sight reading through association of idea, or better still, through a positive vibrational correspondence.

We have been brought up on the Pythagorean theory of overtones, and up to the present time there has been little question about it. Primitive music was composed largely of the unison and the octave, then the fourth and the fifth were evolved, and were the basis of the school of Organum. Gradually the major triad made its appearance, and following the triad in the system of harmonics is the minor seventh (*b* flat in the series of which C is the fundamental, or generic tone); but it is simple to prove that the major seventh (*b* natural) and the ninth (*d*) are perceptible to the physical ear more quickly than the minor seventh. If the triad (*c-e-g*) is struck and *b* and *d* are pressed silently the two strings will respond sympathetically and will be heard much more distinctly than *b* flat, if it be pressed silently instead of *b* and *d*. The reason for this is obvious—*b* and *d*, being the third and the fifth of the dominant, respond more readily to the root tone *g* than does *b* flat which is considerably removed from its root, *c*. *D* responds to *g* as freely as *g* does to *c*, etc., etc.

Harold Bauer tells us that Debussy at one time was obsessed with the idea that his hearing was defective because he could not hear the C major triad without the ninth (*d*) added. It troubled him exceedingly until he proved to his satisfaction the physical existence in the tone, of the third and fifth of the dominant, after which, he used the chord he heard, unquestioningly, and evolved many combinations which we look upon as being distinctively Debussy. The whole tone scale is nothing but the development of this overtone of the fifth repeated again and again; the "added second" that Debussy has made almost commonplace, is only this overtone expressed concretely.

It is also related of Debussy that when he was a cadet at Evreux, he was tremendously interested in the chimes of a convent

near-by, and would spend hours listening to the overtones; that he heard sounds which do not exist to the ears of the average person goes without saying, for many of his compositions give proof of this statement.

Alfred Pochon of the Flonzaley Quartet says that Strawinsky has the keenest sense of hearing of any one he ever knew:

He hears things of which we have no consciousness at all. He does not write with the intention of seeking bizarre and original harmonies, he merely puts down on paper what he actually hears, and the result is entirely different from that of others. For example, we were sitting at the edge of the lake at Morges, Switzerland, one evening when there was not even a ripple across the water, all was very quiet, very still, but for an occasional sound of a bird or a distant voice, and Strawinsky asked, 'Do you hear the lake?'

Pochon said that he heard nothing at all, but Strawinsky, distinctly heard TONE produced by the vibration of the water. In the same way he also hears countless overtones in a bell. To him they are not mathematical calculations, but sounds actually perceptible to the ear, which he reproduced so exactly in one of his sketches for string quartet, as to make us hear the bell through the medium of strings.

Of all the composers designated as ultra-modern, Scriabin has probably made the most profound studies of the physical and psychical possibilities of tone. He heard and accepted the "upper partials" as foundation for chord building, and he made an ARBITRARILY CHOSEN CHORD as his point of departure, using it logically throughout a composition, and giving it consonant significance regardless of its dissonant effect upon ears trained to accept the triad as the model, or the symbol of consonance. An

analysis of his "mystic chord"



shows that he has em-

ployed the 8th, 11th, 14th, 10th, 13th, and 9th overtones from the generic tone C, and has grouped them in fourths. The "mystic" quality lies in its effect upon those who gave it the name, rather than in its origin.

It is difficult to believe that so actual a thing as tone has no definite borders, that it is not merely a question of pitch, nor of intensity, but has to do with the recording power of different ears, due doubtlessly to the nervous sensibility of individual cases. It is almost impossible to make the non-musician believe that hearing can differ in any great degree in people, none of whom

is deaf. It is much the same as trying to explain color to one who is color blind, or absolute pitch to one, tone deaf. This does not mean to infer that those who have absolute pitch have keener ears than those who have not; the one is a case of co-ordination between mind and ear, the other, of recording on a more or less highly adjusted instrument.

The human being is born to-day with much more developed sense perceptions than were his primitive fore-fathers, just as the child has a much larger vocabulary before passing the stage of baby talk than the mature cave-man ever needed. We are children of the age which produces us, and this particular period is one of great complexities not the least of which is modern harmony. But the ear is tremendously elastic in its adjusting powers, and a public is soon educated, or at least accustoms itself rapidly to new combinations of tone.

The fact that a child studying music can play the same false tone over and again without being disturbed by the dissonance shows how rapidly the ear forms a habit for unusual combinations. This same idea is borne out in a statement made by Iwan d'Archambeau, 'cellist of the Flonzaley Quartet:

To show you how the human faculties adjust themselves, I may say that when we first played the Ravel Quartet it contained difficulties that appeared impossible to overcome until we tried the Hugo Wolf work. Then Ravel seemed simple; in turn, the difficulties of the Reger Quartet simplified Wolf, and the Schoenberg! Well—Schoenberg would make anything seem easy by comparison! With each work we have to learn a new technic of expression. After having studied the Schoenberg work as we did, we know the idiom in which it is written and another work from the same hands would be less difficult to get hold of. In the same way the Debussy Quartet meant the mastery of an entirely new technic for the instruments, but now we have learned Debussy's idiom.

Many artists are trying to prove that there is an emotional response to color apart from form, and the question arises whether tone *per se* produces a similar reaction. Is it tone as sound, or its juxtaposition to other tones that produces its effect on the sympathetic nervous system? Would tone separated from rhythm produce emotional reaction, providing that it were tone in the abstract, and not a cry of pain, or the expression of some other mental state? With the primitive, rhythm so obviously was the receptacle which carried melody, and melody developed so spontaneously through rhythmical means, that it still is a matter of conjecture what in music makes the appeal to the greatest number, —melodic content or rhythmic outline? No fixed and hard rule

can answer this last, for man approaches the primitive not only in his moments of creative activity, but in his objective reactions, also; and one might safely assert that the untutored listener responds to obvious rhythms that may easily be reproduced in bodily movements, while the trained musician is annoyed by the banality of those rhythms and seeks his satisfaction in the melodic line, accepting the rhythm as a means to an end. However, one must not lose sight of the fact that there is a MODERN rhythm, and that modern rhythm has influenced modern tonal effects, and vice versa. The outlying characteristic of modern rhythm is that it is *different* from those forms which have gradually developed since man consciously used music as a means of emotional expression; and it has evolved into a more complex web. Has the development of the harmonic system caused a similar development in rhythm, or have the complexities in the scientific world, the problems of the social world, caused us to live at a higher rate of vibration which is reflected in the rhythm of music, and through rhythm in the melodic and harmonic line?

In addition to the recognized rhythms of duple and triple divisions, and the irregular groupings of five, seven, and sometimes eleven beats to the measure, as the Russians have presented them, modern music may also be described as being MULTI-RHYTHMIC and POLY-RHYTHMIC. "Multi-rhythmic" refers to the constant shift of metre as it is found, for example, in Cyril Scott's compositions,—two measures of  $\frac{4}{4}$ , one of  $\frac{5}{4}$ , three of  $\frac{6}{4}$ , two more of  $\frac{4}{4}$ , etc., etc. "Poly-rhythmic" music employs simultaneously three or four kinds of rhythms as Florent Schmitt does,— $\frac{6}{8}$ ,  $\frac{3}{4}$ ,  $\frac{4}{4}$ , to say nothing of more complicated combinations, used, as it were, contrapuntally. (See Cyril Scott's "Prelude Solennelle" and Florent Schmitt's "Sur un Vieux Petit Cimetière".)

Clive Bell, in his illuminating little book called "Art," speaks of the artist's "Passionate apprehension of form." The musician perceives form, then he traces a resemblance between what he sees, and what he knows; secondly he makes a story; thirdly, he asks himself whether the relation of color in his perceptions of natural forms is as he would like Nature to be; fourthly, he seeks satisfaction in an abstract sense that is æsthetic. When he reaches this point he is ready to do away with the first step, so ultimately it is true to say that *apprehension of form* is the most lasting thing in art. With Schoenberg, his sense of form is his outstanding characteristic, influencing his harmonic treatment and his melodic line. To the eye, his music presents a series of arabesque figures that could be worked into a design; this may be due to the fact that

he is an ultra-modern painter as well as composer, and is evidently working out the problem of form, through two mediums.

The modern methods of extension and condensation of intervals (for example, of the augmented octave as Strawinsky uses it, of altered chords, and of elided cadences), the doing away with laborious processes and replacing them with a terse telegraphic style, the use of abbreviated themes and motives, the cutting out of unnecessary details are simply the result of the age in which we live, and are reflected in all branches of literature, art, in fact in commercial life as well as in musical composition. We are coming to a realization of the part played by the imagination,—that one image at a time fills the brain, and on that we concentrate. We no longer ask for concrete images, we prefer to interpret symbols according to our individual degree of mental and spiritual development.

There is something that passes analysis in the means composers use in producing a completed work. The individual viewpoint is not always understood, in fact with the ultra-modern, one might say, it is never completely understood. On this subject Harold Bauer said:

We listened to Strawinsky's little sketches for string quartet and enjoyed them hugely—as a musical joke. But would it not be amusing if Strawinsky had not intended them for a joke! Busoni thought Schoenberg was playing jokes, too, but we know that Busoni was mistaken and that Schoenberg has used arbitrary means of expressing abstract emotion, in all seriousness, and an analysis of his piano pieces, opus 11, shows a logical consistency and a unity of purpose that are very satisfying especially when we keep *his* intention in mind.

Beethoven revealed something of his creative process in his sketch book,—no theme, no motive was too trivial to be put down, but the amount of reconstruction, of elimination, of polishing and refining that went on between the first appearance of the ideas and the finished product is colossal! Truly unbelievable! Tschai-kowsky, on the other hand, resigned himself to the barbaric moment of creation and did not subject his works to Beethoven's refining process.

Again to quote Bauer, who discussed this subject with me at length,—

At one time I felt that Beethoven's system of investing certain chords with a definite physiognomy was all wrong. Certain chords always meant certain things to him, and he felt they must mean the same to the hearer, that is, something quite definite. He held with Bach the theory that the diminished chord had a certain emotional quality, a disintegrating idea. I see now the reason for his system and I cannot



believe that the common chord will ever change,—the common chord supposing definite fulfilment, and the diminished seventh, precisely the reverse,—the two extremes. Each chord has definite intention and varying significance, and music that has value must adopt a similar system, which represents or symbolizes a certain emotional state. Of course one must take into consideration that the diminished chord stands as a type and has been subject to alteration, just as the common chord may be major or minor or even arbitrarily altered, but there must always be repose and agitation, as there can be no definite and permanent value without contrast.

Now comes the question—how far are we guided in our appreciation? Has the common chord something inherent of repose and power or have we agreed upon a convention with the composer? We are looking for a starting point, for a fixed point in space. If a composer tells us with authority,—‘This is your fixed point in space,’ we will not resist him very long; our judgments are formed by habits, our ears are trained rapidly to accept new sounds. What is complete? Major needs minor and minor needs major, so the moderns use the two modes together, and we accept it. There must be a point of repose,—a fixed point in space, and radiating influences. When the fixed point is established the other suggests itself, otherwise there would be no movement.

We have always spoken without question of the “development,” or the “evolution” of music until recently the statement was challenged by a student of the science of vibration who remarked that there was no such thing as the “evolution of music;” that it never evolved, but had always existed as Absolute in space. This opens new vistas for speculation. Music, then, is a Reality, a manifestation of Infinity, depending on Man’s personality, on his keenness of perception and sensitiveness to impression for translation into tangible form. An analogy might be drawn between Music and forces of nature such as electricity or radium, which have always existed, waiting to be liberated or enchained by Man.

If we accept this hypothesis, then our question is answered—there *is* an inherent power in music of which we have touched only the outer rim, and as man’s perceptions become more highly sensitized, more of the “Music of the Spheres” will be disclosed to us, and the music of the future may bear much the same relation to what we have already wrested from Nature, as wireless telegraphy bears to our first crude experiments with poles and wires.

Bach, Beethoven, Chopin, Wagner, Debussy, Scriabin, Schoenberg, Stravinsky, are results,—spontaneous results. Science explains the process, accounts for their individual development *after* they have produced their work, but behind the phenomenon of sound and the laws of form and order, stands the cause which

no scientist, philosopher or creative worker has been able to define. Tagore says that Science eliminates from its field of research the personality of creation and fixes its attention only upon the medium of creation. It is the medium of finitude which the Infinite Being sets before him for the purpose of self-expression. . . . Our law is the law of the universal mind which is the instrument of finitude upon which the Eternal Player plays his dance music of creation.